IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: : Arto LEHTONEN
SERIAL NO.: 09/864,007 EXAMINER: Sujatha Sharma
FILING DATE: 5/23/01 ART UNIT: 2684
TITLE: HANDS-FREE FUNCTION
ATTORNEY DOCKET NO.: 836-010303-US(PAR)

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

DECLARATION UNDER 37 C.F.R. 1.131

Sir:

I, the patent agent responsible for drafting the above-identified patent application (herein after the Application), declare as follows:

1. The invention described and claimed in the Application (herein The Invention) was conceived in Finland, prior to April 7, 2000, (the filing date of U.S. Patent 6,373,942).

2. Attached to this declaration as Appendix A is a copy of the invention report dated September 1, 1999, generated by the inventor, Arto Lehtonen, and sent to co-employees of Nokia Mobile Phones, LTD, the Assignee in this application and employer of the inventor. The memo and drawing show conception of The Invention.

3. The priority application, Finnish application no. 20001274, from which the instant application claims priority, and which I prepared, was filed on May 26, 2000. The Finnish application described and claimed the invention and its filing constructively reduced the invention to practice on May 26, 2000.

4. Due diligence was exercised from prior to April 7, 2000 to the constructive reduction to practice on May 26, 2000. During this due diligence period I received the invention report on February 21, 2000, met with the inventor on April 4, 2000 to discuss the Invention, and completed the first patent application draft on May 3, 2000. Draft comments were returned to me on May 5, 2000. Thereafter, the drafting process continued so that after a few rounds of iteration, on May 26, 2000, I finalized the priority application, and the finalized priority application was filed with the Finnish Intellectual Property Office (a certified copy of which has previously been provided) on the same day.

These facts clearly establish conception of The Invention prior to April 7, 2000 and due diligence from before April 7, 2000 to the constructive reduction to practice of The Invention on filing of the priority application on May 26, 2000.

I declare that all statements made herein are true, and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18

of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent resulting therefrom.

Date: July 6, 2004

By: Sampsa Söderholm

NOKIA

CONFIDENTIAL

☐ File copy A
☐ Inventors copy B

Opinion report Copy accepted

Communication to inventor Copy accepted

INVENTION REPORT

Title of invention: Bluetooth headset with memory card and FM radio

Inventor's name: Arto Lehtonen Employee N:o: 8999
(use space provided on page 2 to add coinventors)

Home address: Silakatu 20 33730 Tampere

Nationality: Finn

Job title: Senior Manager | Status: Employee

Location: Wireless Data, Tampere

Phone +358 50 556 2035 Fax +358 50 85562035

Email: arto.h.lehtonen@nmp.nokia.com

Project: New concepts | Project manager: Arto Lehtonen

Line manager: Sami Inkinen

Enclosures:
☒ Disclosure of invention
☐ Prior art documents
☐ Other

In my opinion the invention belongs to the category *)
(not necessary to fill in)

The invention becomes public on:

I/we consider the invention to belong to the category indicated above and to my/our best knowledge. I am / We are the sole / and original inventor(s) of this invention.

The company may, be virtue of applicable legislation, be entitled to full or partial rights to the invention. I / We acknowledge my / our obligation to sign as inventor(s) all documents that may be required for protecting the invention in different countries.

We agree to that employer's four-month response time to this invention report can be extended by two months ☒ yes ☐ no.

Signature of inventor(s): (additional inventors should sign on page 2)

Date: 1.9.99

Signature:

I acknowledge receipt of the company's decision regarding the invention indicated above

Date:

Signature(s) of inventor(s):

INVENTION REPORT RECEIVED

Code: 24932 | Classification: | Rating:

Place: Tampere Date: 06.09.99

Signature:

COMPLETED BY MANAGER

Project / line manager name:

Sami Inkinen

I have read and understand this invention report disclosure and I agree with the name(s) of the inventor(s).

Date: 2.9.1999

Signature:

Please complete the attached evaluation form followed by headline TO BE COMPLETED BY THE MANAGER and sign and date all the pages of the disclosure.

REPLY TO THE INVENTORS

I made it known hereby that the company has decided to:

☐ reserve the invention for the company
☐ reserve the right to use the invention
☐ allow the inventor(s) the liberty for independent action
☐ issue the enclosed statement
☐ keep the invention secret
☐ apply for a patent on the invention
☐ refrain from applying for a patent on the invention
☐ postpone the decision about applying for a patent

The invention belongs to category *)

Announcement reward:

Place: | Date:

Signature:

*) see instructions to determine the category on last page.

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NOKIA

1. Field of the invention

This invention relates in general to the field of mobile phones, more precisely to create a Nokia Walkman concept allowing mobile phone users to carry and listen to hifi music with their personal phone.

2. Background of the invention

The distribution and storage of music will change dramatically over the next few years. There are already now commercial products for playing MP3 compressed music files stored on memory cards (f.ex. MMC). MP3 music files are also widely available from the internet for downloading.

Nokia flagship II, Calypso, is an excellent product to introduce the Nokia Walkman concept. Its WAP browser can be used for searching, downloading and purchasing music files from internet. It also has the software to decode the music files for replay.

There are however a few restrictions for use. One is the lack of memory for storing multiple music files which usually require about 1 Mbyte per one minute audio output. As Calypso has only 3..4 Mbytes memory for all user data, of which a large share is taken by contacts, multimedia messages and photos, there is not much space letf for songs. Another restriction is the mono audio output through a small speaker or headset.

This invention is a solution to overcome these restrictions to create a true Nokia Walkman concept. At the same time the invention provides a way to add a memory card option to users. The lack of a memory card slot has been considered a high risk for the commercial success of the Calypso products itself. The built-in memory can be easily filled by photos and additional memory may be considered as a must by end users. The memory card was excluded from the basic product due to size restrictions. This invention brings the memory card option in the most popular accessory device for all mobile phones: the headset.

The Flagship products may have the memory card slot built in in the future, but the size problem will continue to restrict the Classic segment phones for including memory cards slots. This invention will continue to be useful in this segment after Calypso.

This invention may be useful for Cleopatra as well. The headset module could have a Compact Flash slot for have extra large hard disk for storing multimedia messages with video.

3. Summary of the invention

This invention is a stereo headset with a bluetooth tranceiver, a memory card slot, a microphone, an FM radio and a simple user interface panel.

Whereas the size and weight of the electronics in a major problem in mono bluetooth headset, that is not the case in stereo headsets which are always bigger and have wires needed to connect the both ears. The addidional electronics can form a small module that user can clip in his shirt or pocket; two short wires lead to the ears. Alternatively, the electronics can be placed in a band which goes over the head.

4. How does the new method work?

The user downloads and pays for music files (compessed f.ex. in MP3 format) using the WAP brower of the phone. The music files are immediately moved over the low power rf link to the memory card inserted in the headset unit for later use.

The user can anytime start Music player application in the phone, and select a song from the memory card directory. The selected song is moved over low power rf to the basic product memory for decoding. The decoded audio signal is then send over low power rf to the stereo headset for replay.

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The Bluetooth transfer capasity is high enough to move the encoded MP3 file content from the memory card to the phone, and phone can send the decoded audio signal to the headset. An MP3 file is compressed to 1Mbyte per minute, which is about 130 Kbits/sec. This takes only a marginal share of the transfer capasity. For example a stereo sound with 12 bits dynamics and 32KHz sample rate results in 2*12*32000=768 Kbits per sec.

When a phone call is received while listening to music, the incoming call is indicated by a special sound. The user can answer to the phone either from the UI panel of the headset unit or from the phone in the conventional way. The headset unit has a microphone for two way phone conversation.

The user has an option to listen to FM radio broadcasts. All FM radio receiver components are inside the headset; the audio output signals are produced internally from radio signal receiver by the antenna. Audio signals are not processed by the phone. The phone can be used for UI controls: tuning, channel selection, volume control, etc.

5. What problems are solved using this new method?

- High quality stereo sound is achieved for convinient personal use
- Memory card option is brought to Calypso end users
- GSM tranceiver does not interfear FM radio

6. Does the method have any drawbacks?

The user that want an optional memory card for storing photos may not be that interested in music applications and may not want to wear or carry a stereo headset.

The end user price of the headset unit is likely to be considerably high, appr. FIM 1000 as the electronics is rather expensive. The memory cards may also be rather expensive. Today 8 Mbytes costs appr. FIM 300 to end users. In the year 2001, the user will get 64..256 Mbytes at the same price.

7. Explain briefly what you would have to do to determine if a competitor was using this invention

All components of the invention are clearly visible: memory card, bluetooth, stereo headset.

8. Search words

- Electronic music distribution and compression
- Bluetooth headsets
- Memory cards

9. Has the method been in use, will it soon to be used or published or in any other way made available to the public? When? How?

No.

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NOKIA

TO BE COMPLETED BY THE MANAGER

1. NOKIA USE

Is this invention going to be used by NOKIA? ☐ Yes ☒ Possibly ☐ No

In which products? (Business Unit)	Development status of the invention?
	☐ is fully developed ☒ is being developed further ☐ has no further work envisaged on it

2. VALUE OF THE INVENTION

Describe the strategic importance to NOKIA by rating 0 - 5:

0 = none
1 = marginal
(2) = modest (easy to design around or modest potential for standard specification)
3 = moderate (difficult to design around or high potential for standard specification)
4 = significant (only commercially viable solution or very high potential for standard specification)
5 = key strategic value (reads on the standard specification)

Further information

NEEDS EXTRA WORK, NOW A CONCEPT IDEA.
DRAWBACK IS THAT PHONE IS ALWAYS NEEDED TO DECODE THE MUSIC — HEADSET ALONE DOES NOT WORK.

Are competitors likely to want to use the invention? ☒ Yes ☐ No

Why?

3. PATENTING

Do you think we should file a patent application? ☒ Yes ☐ No

Which countries are the most important from the patenting point of view?

USA, EUROPE, JAPAN

Urgency of filing ☒ Not urgent ☐ Urgent, deadline

If urgent, please explain why

Signed [signature] Date 2.9.1999

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